2,000—May, 1911.
Circular No. 6.

ONTARIO
DEPARTMENT OF EDUCATION

Apparatus for Physics and Chemistry

PHYSICS

The Middle Schools of High and Continuation Schools.

MECHANICS AND HYDROSTATICS

	Probable Limit of Cost. Min.	Max.
2 Thistle Tubes	$ 0 05—	$ 0 06
1 Metric Scale, one foot long. The ordinary School rulers graduated in inches and centimetres will answer	05—	10
1 Meter Stick	30—	35
1 Calipers, Simple form	25—	28
1 Dissected Litre Block	1 50—	2 00
1 Pinch-Cock		10
1 Burette, Mohr's, 50 C.C. graduated in tenths		1 50
1 Measuring Cylinder, 100 C.C. graduated	50—	60
3 Beakers, different sizes, lot	30—	33
1 Pendulum Bob	20—	25
1 Physical Balance, with set of Metric Weights	6 00—	15 00
1 Spirit Lamp or Bunsen Burner	25—	50
3 Spring Balance, graduated ounces and grains, each	60—	90
1 Glass Battery Jar, 6 in. deep, 8 in. diam.		35
1 Mortar and Pestle	20—	25
1 Pair Single Pulleys	25—	50
1 Pair Double Pulleys	45—	50
1 Wheel and Axle (Wood)	1 15—	1 50
1 Inclined Plane and Car	3 75—	4 80
1 Vernier Calipers (optional)	1 75—	5 00
1 Micrometer Wire Gauge (optional)	3 00—	5 00

	Probable Limit of Cost. Min.	Max.
1 Air Pump and Receiver	$10 00—	$30 00
1 Elastic Rubber Balloon. A toy balloon answers well	08—	09
1 Transmission of Pressure Apparatus		1 75
1 Archimedes Principle	1 45—	1 50
1 Globe for weighing Air		3 00
1 Barometer Tube, heavy glass		35
1 Mariotte's Law Tube	70—	75
1 Lift Pump, Glass Model	1 25—	1 30
1 Force Pump, Glass Model	1 25—	1 50
1 Hydraulic Press, Glass Model		1 50
1 Filter Funnel	08—	10
1 Retort Stand (two rings)	40—	50
3 Small Florence Flasks with perforated rubber corks to fit	10—	40
1 Florence Flask with wide mouth	10—	13
1 Rubber Cork with two holes to fit Florence Flask with large mouth	08—	12
1 Hydrometer Jar		40
1 Porous Cup	15—	20
1 Specific Gravity Bottle	60—	1 35
1 Weighted Wooden Prism, 1 square centimeter in section	10—	20
1 Hydrometer for Heavy Liquids	45—	75
1 Hydrometer for Light Liquids	45—	75
1 Aneroid Barometer	5 00—	10 00
1 Set Capillary Tubes	75—	85
1 Baroscope	2 00—	3 00

SOUND

1 Brass Rod for showing the production of Sound by longitudinal vibrations of rods	25—	1 30
1 Whistle		10
1 Coil Spring, about 1 inch in diameter and 2 feet long		20
1 Bell in Vacuo	1 80—	2 50
1 Whirling machine		5 00
1 Toothed Wheel with ring of holes to attach to Whirling Machine to illustrate Pitch and Sound	4 00—	5 00
1 Clamp for Vibrating Plates	1 25—	2 50
2 Brass Plates, one square, one circular	1 00—	2 50
1 Sonometer	5 00—	10 00
1 Violin Bow	75—	1 50
1 Tuning Fork-A	20—	25
2 Tuning Forks-C, mounted on Resonance Boxes, each	3 00—	8 00
2 Large Concave Mirrors for Reflection of Sound, each	2 00—	3 00
1 Interference Apparatus		5 00
1 Siren (optional)	5 00—	30 00
Glass Tubes of various sizes and lengths for showing Vibrations of Air Columns	75—	1 50
1 Organ Pipe with Glass Front		2 50
1 Tambourine to use with the above	25—	50

	Probable Limit of Cost. Min.	Max.
1 Manometric Flame Apparatus	$ 5 00—	$10 00
2 Troughs for showing that waves travel faster in deep than in shallow water	1 50—	3 00
1 Kundt's Tube for finding velocity of sound in a solid (optional)	3 75—	5 00
HEAT		
1 Ball and Ring	1 00—	1 25
1 Compound Bar	40—	50
1 Thermometer, graduated in both Centigrade and Fahrenheit Degrees		70
1 Differential Thermometer	1 50—	3 50
1 Calorimeter	1 50—	2 00
1 Fire Syringe	1 50—	2 00
1 Apparatus for determining the coefficient of linear expansion in a metal	2 25—	5 00
1 Apparatus for Testing "Boiling Point" in a Thermometer		1 50
1 Maximum Thermometer	2 00—	6 00
1 Minimum Thermometer	2 00—	5 40
1 Hope's Apparatus for Showing Maximum Density of Water	4 00—	4 50
1 Regnault's Apparatus for Finding Coefficient of Expansion of a Gas (optional)	1 50—	7 00
1 Dew Point Instrument	1 50—	2 50
1 Wet-and-Dry Bulb Hygrometer	2 50—	6 00
1 Distillation Apparatus	1 00—	2 00
1 Cryophorus	1 00—	1 50
1 Model of Steam Engine	3 00—	10 00
1 Edser's Apparatus for Finding the Relative Conducting Powers of Metals	2 25—	2 50
1 Model Davy Safety Lamp	2 50—	3 00
1 Apparatus for Showing Principle of Ventilation	1 25—	1 50
LIGHT		
1 Cardboard Screen with Frame		0 50
1 Plane Rectangular Glass Tank, to be used also as Pneumatic Trough	2 50—	3 50
1 Plane Mirror, Mounted in Frame with Supports to Stand Vertically on the Table		3 00
1 Port Lumiere	10 00—	25 00
or Projection Lantern	15 00—	200 00
1 Optical Bench and Photometer, complete with Concave and Convex Mirrors and Set of Demonstration Lenses	5 50—	20 00
1 Optical Disc and Refraction Tank		17 50
1 Refraction Tank		3 50
1 Rotating Mirror, mounted on stand	2 50—	4 00
2 60° Glass Prisms	70—	2 00
1 Focusing Lens, large, mounted on stand	3 00—	4 00
1 Colour Wheel for re-Composition of Light		1 50
1 Direct Vision Spectroscope	6 00—	25 00
1 Telescope (optional)		5 00

ELECTRICITY AND MAGNETISM

	Probable Limit of Cost. Min.	Max.
2 Bar Magnets	$ 0 25—	$ 0 50
1 Horse Shoe Magnet	10—	20
1 Compass		20
1 Bar Soft Iron (round, 6 inches long)	10—	15
1 Sheet Zinc and Sheet Copper (Pair Elements)		15
1 Galvanoscope, complete	75—	2 50
4 Dry Cells	25—	30
1 Spool Double Covered Magnet Wire, No. 20, to be used for making Electro-Magnets, etc		20
4 Small Incandescent Lamps (3 volts), each		40
1 Dipping Needle	3 00—	20 00
2 Insulating Stands, for suspending pith balls, etc.	25—	1 00
2 Spherical Metallic Condensers on insulation stands		2 50
2 Hollow Hemispherical Condensers, with insulating handles to fit over spherical condenser		2 50
1 Cylindrical Metallic Condenser on insulating stand		2 50
1 Glass Rod and 1 Ebonite Rod, for experiments in electrification	35—	75
1 Wimshurst Electrical Machine (optional)		25 00
1 Gold Leaf Electroscope (fitted as a condensing electroscope)		10 00
2 Leyden Jars		3 00
1 Discharger for Leyden Jar		2 00
Strips of Zinc, Copper, Carbon, Iron, Lead and Platinum to be used in constructing the various forms of cells	50—	2 00
1 Daniell Cell	50—	75
1 Leclanché Cell	50—	60
1 Water Voltameter	2 00—	2 75
1 Copper Voltameter	1 50—	4 50
1 U-Shaped Tube on stand	1 00—	1 50
2 Coils with Mercury Commutator, for showing Laws of Currents, complete	1 00—	3 50
1 Set of Telegraph Instruments	2 50—	5 00
1 Electric Bell	50—	1 00
1 Astatic Pair of Magnetic Needles	75—	1 75
1 Astatic or D'Arsonval Galvanometer	5 00—	10 00
1 Tangent Galvanometer	3 50—	10 00
1 Ammeter	3 00—	10 00
1 Voltmeter	3 00—	10 00
1 Set of Coils for demonstrating the laws of current induction		3 00
1 Dynamo and Motor, showing parts and connections	12 00—	30 00
1 Arc Lamp, Simple Regulator	3 00—	3 30
1 Wheatstone Bridge	5 00—	25 00
Instead of the above a Meter Sliding Bridge may be used	5 00—	15 00
1 Induction Coil	3 00—	25 00
1 Set Telephone Instruments	4 00—	10 00
1 Set Wireless Telegraphy Instruments (simple form)		15 00
1 X-Ray Tube		5 00